J. E. CARROLL.

AUTOMOBILE.

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1,136,864.

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Fig. 1

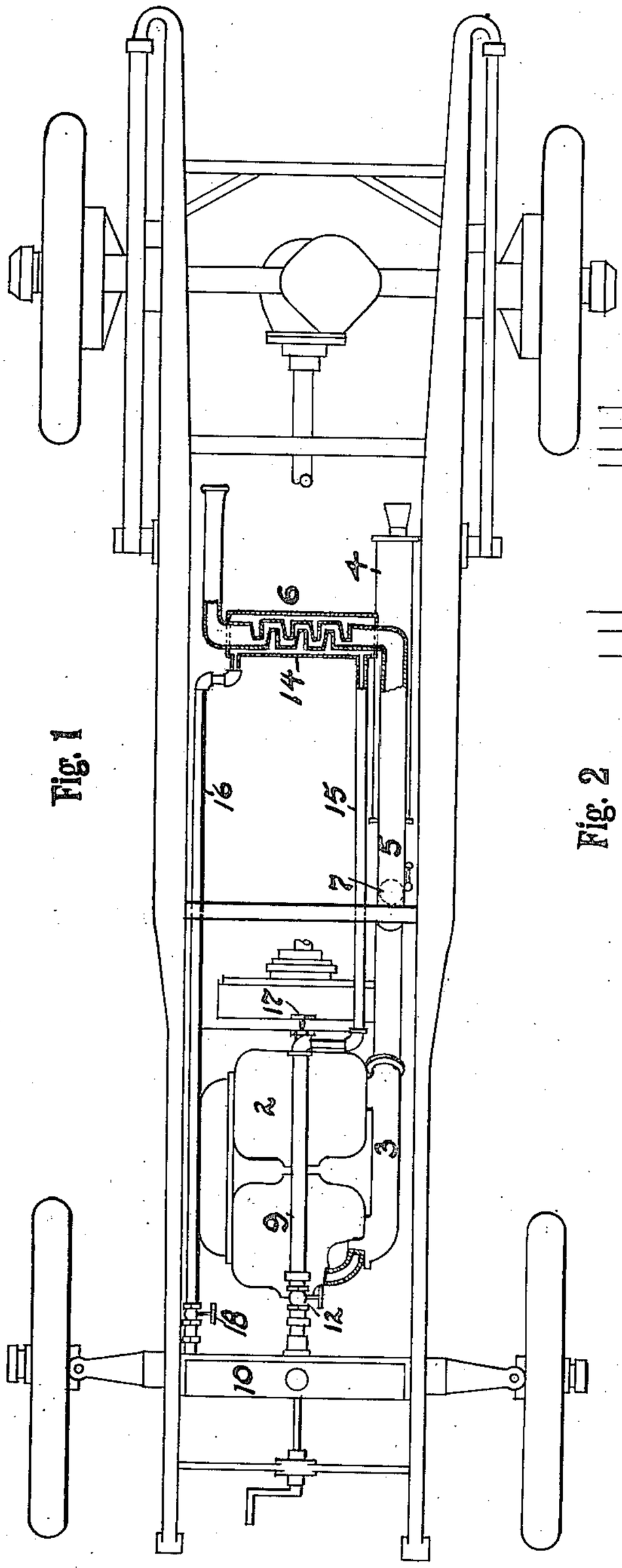
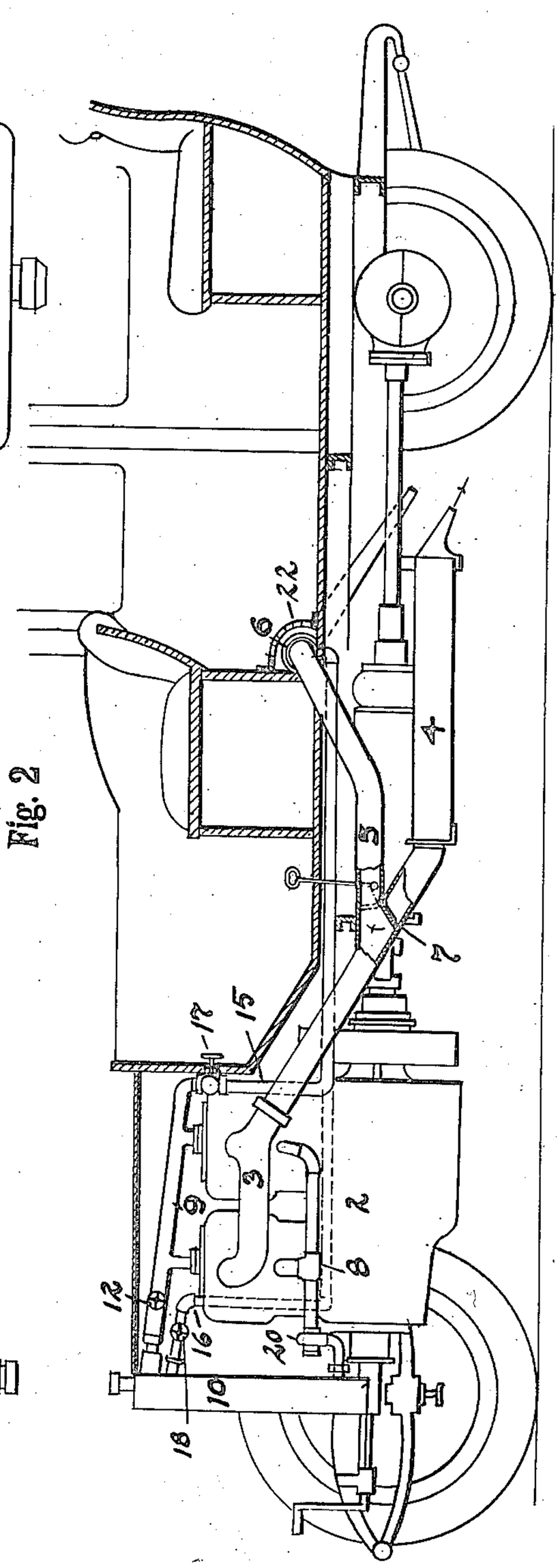


Fig. 2



ATTEST

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UNITED STATES PATENT OFFICE.

JEREMIAH E. CARROLL, OF CLEVELAND, OHIO.

AUTOMOBILE.

1,136,864. Specification of Letters Patent. Patented Apr. 20, 1915.

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To all whom it may concern:

Be it known that I, JEREMIAH E. CARROLL, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automobiles, of which the following is a specification.

My invention has reference to an improvement in automobiles, and the invention consists chiefly in means for utilizing the otherwise waste heat developed by the engines for heating the automobile for the comfort of the occupants, all substantially as shown and described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view, and Fig. 2 is a side elevation of an automobile embodying my invention in one of its accepted forms, and the conception involves the super-heating of the water as it comes from the engine cooling jackets by means of the waste products of combustion from the engines and utilizing the same in a heat radiator located in the front and bottom of the passenger compartment of the machine, as shown. Presumably, however, the excess heat imparted to the water in transit is largely radiated at the point of generation so that by the time the water returns to the engine through the reservoir it will be cool enough for the engines, especially in very cold weather for which my invention is designed.

Referring to the drawings, 2 represents the engines, one or more, and 3 the main exhaust pipe, tube or conduit for the waste products of combustion. This pipe has the usual muffler 4, and a by-pass for the said products is indicated by 5 and traverses the body of the vehicle at the front and bottom of the rear seating compartment through a muffler 6 set therein and from which the discharge is at the bottom and to the rear of the car as usual. A valve 7 is set at the junction of the conduits 3 and 5 adapted to direct the products of combustion to either channel at pleasure. In warm weather the heat will not be wanted in the machine and the pipe 5 will then be closed and the said products and the water will take their usual courses through pipes 3, 8 and 9. The said water pipes 8 and 9 are for normal use in conjunction with the tank or reservoir 10. That is, the water enters the engine jackets by pipe 8 and is discharged into pipe 9 whence it returns to reservoir 10 through the open valve 12. This represents the usual circuit for the water. My invention contemplates the utilization of this water for heating the car, and to this end I inclose the muffler 6 with a jacket 14 and run a pipe 15 from the pipe 9 to the said jacket and a return pipe 16 from said jacket to the reservoir 10. When this circuit is used for the water from the engines the valve 12 is closed and the valve 17 opened. Otherwise the valve 17 is closed and valve 12 opened. Pipe 8 from the reservoir to the engines is used alike in both cases, and a shut-off valve 18 is also shown in return pipe 16 next to the reservoir. The usual pump 20 is set into the pipe connection 8.

The foregoing improvement, obviously, is a cold weather or winter expedient, but is permanently installed and adapted to be used with a moment's effort by adjusting the valves. It is especially desirable in excessive cold weather and on long runs, and has been found advantageous also as a means of preventing freezing in the water connections when the machine is in low temperatures and has to stand for an hour or more without running. Of course the water in the tank and pipes will be considerably warmer by this system than it would be if short circuited as usual through the tank.

A grated or basket-like cover 22 is placed over the radiator as a rest for the feet.

Of course all the foregoing mechanism is out of sight on the car, and the views of the car itself are more or less diagrammatic so as to reveal the improvements and their relations to the other parts.

The radiator, so-called, comprises the muffler 6 and the water jacket 14 working together, the muffler super-heating the jacket as the contents of both flow through the same.

What I claim is:

An automobile having an engine with a water jacket and a seating compartment, a

conduit for the waste products of combustion from the engine having a by-pass through the said compartment and a muffler in said by-pass positioned in said compartment, a jacket about said muffler and water circulating pipes connecting the engine water jacket and the jacket of the said muffler.

In testimony whereof I affix my signature in presence of two witnesses.

JEREMIAH E. CARROLL.

Witnesses:
E. M. FISHER,
H. T. FISHER.